

REMARKS UNDER 37 CFR § 1.111

Formal Matters

Claims 1, 50-52, 56 and 68-85 are pending after entry of the amendments set forth herein.

Claims 1, 48 and 50-56 were examined. Claims 1, 48 and 50-56 were rejected.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

The Office Action

Claims Rejected Under 35 U.S.C. Section 101 (US Pat. No. 6,506,149)

Claims 48 and 54-55 were rejected under 35 U.S.C. Section 101 as claiming the same invention as claims 48 and 56-57 of U.S. patent No. 6,506,149. In response thereto, claims 48, 54 and 55 have been canceled.

In view of the above remarks and the cancellation of claims 48, 54 and 55, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 48 and 54-55 under 35 U.S.C. Section 101 as claiming the same invention as claims 48 and 56-57 of U.S. patent No. 6,506,149, as being moot.

Claims Rejected Under 35 U.S.C. Section 101 (US Pat. No. 6,899,670)

Claims 50-53 were rejected under 35 U.S.C. Section 101 as claiming the same invention as claims 1-4 of U.S. patent No. 6,899,670. In response thereto, claim 50 has been amended above to recited a method for compliant retraction of a beating heart. The Beating heart is maintained in a retracted position and the suction member has freedom to move relative to the mounting element, thereby maintaining beating movements of the heart substantially unrestricted. It is respectfully submitted that claims 1-4 of U.S. Patent No. 6,899,670 do not recite these features.

In view of the above remarks and amendment of claim 50, the Examiner is respectfully requested

to reconsider and withdraw the rejection of claims 50-52 (claim 53 having been canceled) under 35 U.S.C. Section 101 as claiming the same invention as claims 1-4 of U.S. patent No. 6,899,670, as being no longer appropriate.

Claim Rejected On Ground of Nonstatutory Obviousness-Type Double Patenting (US Pat. No. 6,730,020)

Claim 56 was rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 32 of U.S. Patent No. 6,730,020. Although the claims were not identical, the Examiner asserted that claim 56 was not patentably distinct as it was generic to claims 1 and 32 of the patent applied thereto.

Applicants have amended claim 56 above to recite joint members configured to interfit with one another and lock with respect to one another while in the rigid state, while being movable with respect to one another while in said flexible state; at least one surface of two interfitting surfaces of two of said joint members having a friction enhancing feature to improved rigidity of locking between the two joint members when in said rigid state. It is respectfully submitted that claims 1 and 32 of the patent do not recited joint members having interfitting surfaces or at least one surface of two interfitting surfaces of two of said joint members having a friction enhancing feature to improved rigidity of locking between the two joint members when in said rigid state.

In view of the above amendment of claim 56, the Examiner is respectfully requested to reconsider and withdraw the rejection of claim 56 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 32 of U.S. Patent No. 6,730,020, as being no longer appropriate.

Claim Rejected On Ground of Nonstatutory Obviousness-Type Double Patenting (US Pat. No. 6,506,149)

Claim 1 was rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,506,149. Although the claims were not identical, the Examiner asserted that the claims were not patentably distinct as both were directed to an organ manipulation apparatus having at least one suction member having a vacuum space; a support structure and a joint coupled between the suction member and the support structure such that the suction member

has freedom to move relative to the support structure in response to normal movement of the organ.

Although Applicants do not necessarily agree with this ground of rejection and do not acquiesce thereto (e.g., instant claim 1 recites that the suction member has freedom to move at least along an axis of the suction member relative to the support member, while claim 1 of the patent recites that the suction member has freedom to rotate), in order to advance the prosecution of the instant application, Applicants are submitting a terminal disclaimer concurrently herewith, to overcome this ground of rejection.

In view of the submission of the terminal disclaimer, the Examiner is respectfully requested to reconsider and withdraw the rejection of claim 1 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,506,149, as being moot.

Claim Rejected Under 35 U.S.C. Section 102(e) (Fox et al.)

Claim 56 was rejected under 35 U.S.C. Section 102(e) as being anticipated by Fox et al., U.S. Patent No. 5,984,864. Applicants respectfully submit that this ground of rejection has been overcome by the above amendment of claim 56, at least for the reason that Fox et al. does not disclose joint members configured to interfit with one another and lock with respect to one another while in the rigid state, while being movable with respect to one another while in said flexible state; at least one surface of two interfitting surfaces of two of said joint members having a friction enhancing feature to improve rigidity of locking between the two joint members when in said rigid state

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claim 56 under 35 U.S.C. Section 102(e) as being anticipated by Fox et al., U.S. Patent No. 5,984,864, as being no longer appropriate.

New Claims

New claims 68-72 depend from claim 1 and it is therefore respectfully submitted that these claims are allowable for at least the same reasons provided above with regard to claim 1. Further, claim 68 recites that said joint allows said at least one suction member to rotate relative to said support structure. Claim 69 further recites that said joint allows said at least one suction member to translate relative to said support structure, in directions along a longitudinal axis of at least one of said at least one suction members. Claim 70 further recites that said at least one suction member has freedom to move, relative to the support structure, in response to normal movement of the organ. Claim 71 further recites

that the organ being manipulated is a beating heart. Claim 72 further recites that the at least one suction member is configured to conform to, and exert suction on, the apex of the beating heart.

New claims 73-80 depend from claim 56 and it is therefore respectfully submitted that these claims are allowable for at least the same reasons provided above with regard to claim 56. Further, claim 73 recites that said friction enhancing feature comprises a textured surface. Claim 74 further recites that said friction enhancing feature comprises a difference in hardness between compositions of the first and second surfaces. Claim 75 further recites that said friction enhancing feature comprises a groove in at least one of said first and second surfaces. Claim 76 further recites a material filling a groove, said material being softer than a composition of the surface in which said groove is formed. Claim 77 further recites that said friction enhancing feature comprises one of said surfaces having a jagged profile comprising circular shoulders. Claim 78 further recites that said friction enhancing feature comprises at least one of said surfaces having a portion thereof formed of a material having a greater coefficient of friction than a coefficient of friction of a material forming a remainder of said at least one surface. Claim 79 further recites that said friction enhancing feature comprises at least one of said surfaces having a portion thereof formed of a material having a greater hardness than a hardness of a material forming a remainder of said at least one surface. Claim 80 further recites that said friction enhancing feature comprises a difference in coefficients of friction between compositions of the first and second surfaces.

New claim 81 is an independent claim that recites an organ manipulation apparatus, including: at least one suction member having an inner surface and an outer surface, wherein the suction member is configured to exert sufficient suction force on a beating heart to move the beating heart when the suction member is placed against the beating heart, a pressure differential is established between the inner surface and the outer surface, and the suction member is moved; a support structure; and a joint coupled between the suction member and the support structure, wherein the support structure and the joint are configured to support the suction member, with the beating heart supported in a retracted position by the suction member, such that the suction member has freedom to move relative to the support structure, in response to normal movements of the beating heart. Claims 82-85 depend from claim 81. Claim 82 further recites that said joint allows said at least one suction member to rotate relative to said support structure. Claim 83 further recites that said joint allows said at least one suction member to translate relative to said support structure, in directions along a longitudinal axis of at least one of said at least one suction members. Claim 84 further recites that said support structure comprises an elongated arm. Claim 84 further recites that the elongated arm is a locking arm having a flexible state and a rigid state,

said locking arm comprising: a cable; and joint members threaded along the cable, said joint members configured to interfit with one another and lock with respect to one another while in the rigid state, while being movable with respect to one another while in said flexible state.

Conclusion

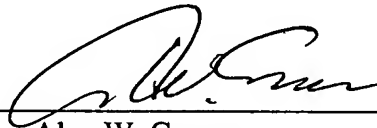
Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-2653, order number GUID-028CON2.

Respectfully submitted,

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